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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/782,758	02/23/2004	Katsunori Kawano	118797	6184

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EXAMINER

giesy, adam

ART UNIT	PAPER NUMBER
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2627

MAIL DATE	DELIVERY MODE
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12/20/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/782,758	Applicant(s) KAWANO ET AL.	
	Examiner Adam R. Giesy	Art Unit 2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 November 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17, 19 and 20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 10-17, 19 and 20 is/are allowed.
- 6) ☒ Claim(s) 1 and 4-9 is/are rejected.
- 7) ☒ Claim(s) 2 and 3 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 March 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 4, 5, 8, and 9 rejected under 35 U.S.C. 102(b) as being anticipated by Moser et al. (hereinafter Moser - Holographic Memory with Localized Recording).

Regarding claim 1, Moser discloses a hologram erasing method comprising: detecting, on an optical recording medium where holograms are recorded, a recording region where a hologram to be erased is recorded (see page 3912, Part 3 'Selective Erasure', second paragraph – note that before selective erasure of a hologram can begin any apparatus must inherently either identify a recording area to be erased or randomly erase any recording area); and erasing the hologram by irradiating the detected recording region with a reference light beam and a random modulation signal light beam at the same time (see page 3913, left column, first paragraph – note the sentence: 'When the reference spot size is reduced, the intensity of the green recording beam and sensitizing beam increases, enhancing the effect of fanning which cases erasure of farther neighboring holograms.' – this passage denotes the use of the signal and reference beams (both green) as well as a violet sensitizing beam; see also Figure 3 – note the SLM in the path of the signal or non-shaded beam; see also page 3911, left column, third paragraph – note the sentence: 'A SLM of 640 x 480 pixels (30

micrometers in size) is used to display random binary patterns.' The Examiner interprets this to mean that the signal beam is also made to have random binary data).

Regarding claim 4, Moser discloses all of the limitations of claim 1 as discussed in the claim 1 rejection above and further that the method further comprises applying exposure energy, which is no lower than the exposure energy during recording, to the recording region of the hologram by using the signal light beam and the reference light beam (see page 3913, left column, first paragraph – note the sentence: 'When the reference spot size is reduced, the intensity of the green recording beam and sensitizing beam increases, enhancing the effect of fanning which cases erasure of farther neighboring holograms. '; see also page 3909, right column, first paragraph – note that the 532 nm (green) signal and reference beams have an intensity of 80 mW/cm². Therefore, the examiner asserts that even though the beam passes through a beam splitter, the signal and reference beams will be equal in intensity. Examiner further asserts that since the erasure of the hologram is similar to the recording of a new hologram, and no documented intensity drop is shown between the two processes, then the Moser reference suggests using both signal and reference beams for erasing at an equal intensity to the signal and reference beams used for recording).

Regarding claim 5, Moser discloses all of the limitations of claim 1 as discussed in the claim 1 rejection above and further that the method further comprises causing an intensity distribution of the reference light beam on the optical recording medium to substantially coincide with an intensity distribution of the signal light beam (see page 3913, left column, first paragraph – note the sentence: 'When the reference spot size is

reduced, the intensity of the green recording beam and sensitizing beam increases, enhancing the effect of fanning which cases erasure of farther neighboring holograms.').

Regarding claim 8, Moser discloses all of the limitations of claim 5 as discussed in the claim 5 rejection above and further that generating the reference light beam, in which a phase is random and a shape and intensity are provided in accordance with a profile of the signal light beam (see page 3913, left column, first paragraph – note the sentence: 'When the reference spot size is reduced, the intensity of the green recording beam and sensitizing beam increases, enhancing the effect of fanning which cases erasure of farther neighboring holograms.' Examiner asserts that this suggests that the reference beam is clearly provided with respect to a signal beam profile in order to achieve the desired effect with or without fanning).

Regarding claim 9, Moser discloses all of the limitations of claim 5 as discussed in the claim 5 rejection above and further that irradiating, with the reference light beam, only substantially the same region as the region which is irradiated with the light beam or as a signal light beam defocused region (see page 3913, left column, first paragraph – note the sentence: 'When the reference spot size is reduced, the intensity of the green recording beam and sensitizing beam increases, enhancing the effect of fanning which cases erasure of farther neighboring holograms.' Examiner asserts that since the reference beam spot size is changed, this clearly suggests that the reference beam irradiates only substantially the same region as the signal beam, since it is impossible to irradiate the exact same regions with beam spots of two different sizes).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 6 and 7 rejected under 35 U.S.C. 103(a) as being unpatentable over Moser et al. (hereinafter Moser - Holographic Memory with Localized Recording).

Regarding claim 6, Moser discloses all of the limitations of claim 1 as discussed in the claim 1 rejection above. Moser does not specifically disclose angle multiplex recording.

However, the Examiner notes that it is obvious to irradiate the hologram with a reference light beam that has the same angle as the reference light beam used during recording since the signal beam and the reference beam are used to destroy the recorded interference pattern. It is well known that the interference pattern is recorded from the interference between the signal beam and a reference beam. Since the interference pattern of a specific angle and wavelength is being destroyed, then the reference beam from the erasing must be the same (in angle, phase, wavelength, etc.) as the reference beam used for recording, otherwise the interference pattern would not be properly irradiated and therefore would not be destroyed.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the hologram erasing method as disclosed by Moser with the application of a recording reference beam and erasing reference beam of the

same angle, the motivation being to properly irradiate and erase a hologram recorded by angle multiplex recording.

Regarding claim 7, Moser discloses all of the limitations of claim 1 as discussed in the claim 1 rejection above. Moser does not specifically disclose shift multiplex recording.

However, the Examiner notes that it is obvious to irradiate the hologram with a reference light beam that has the same wavefront and position as the reference light beam used during recording since the signal beam and the reference beam are used to destroy the recorded interference pattern. It is well known that the interference pattern is recorded from the interference between the signal beam and a reference beam. Since the interference pattern of a specific angle and wavelength is being destroyed, then the reference beam from the erasing must be the same (in angle, phase, wavelength, etc.) as the reference beam used for recording, otherwise the interference pattern would not be properly irradiated and therefore would not be destroyed.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the hologram erasing method as disclosed by Moser with the application of a recording reference beam and erasing reference beam of the same wavefront and position, the motivation being to properly irradiate and erase a hologram recorded by shift multiplex recording.

Allowable Subject Matter

5. Claims 10-17, 19, and 20 are allowed.

See reasons for indication of allowable subject matter in the previous Office Action, mailed on 1/8/2007.

6. Claims 2 and 3 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

See reasons for indication of allowable subject matter in the previous Office Action, mailed on 1/8/2007.

Response to Arguments

7. Applicant's arguments, see Remarks, filed 10/11/2007, with respect to claim 1 have been fully considered and are persuasive. Examiner asserts that the reference cited in the last Office Action still applies (as discussed in this rejection – see above), however, and the grounds of rejection have not changed.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

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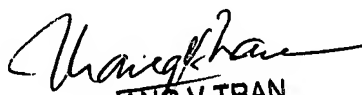
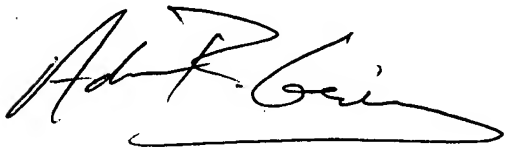
extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Adam R. Giesy whose telephone number is (571) 272-7555. The examiner can normally be reached on 8:00am- 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wayne R. Young can be reached on (571) 272-7582. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

ARG 12/17/2007



THANG V. TRAN
PRIMARY EXAMINER